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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Bunshi Fugetsu

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EXAMINER

MCCRACKEN, DANIEL

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

02/27/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<i>Office Action Summary</i>	Application No.	Applicant(s)	
	10/537,478	FUGETSU, BUNSHI	
	Examiner	Art Unit	
	DANIEL C. MCCracken	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2008.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-10 and 12-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-10 and 12-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

Citation to the Specification will be in the following format: (S. # : ¶/L) where # denotes the page number and ¶/L denotes the paragraph number or line number. Citation to patent literature will be in the form (Inventor # : LL) where # is the column number and LL is the line number. Citation to the pre-grant publication literature will be in the following format (Inventor # : ¶) where # denotes the page number and ¶ denotes the paragraph number.

### *Response to Arguments*

#### Status of Application

Claims 4-6 and 11 are cancelled. Claims 1-3, 7-10, and 12-15 are currently amended. Claims 16-32 are new.

#### Claim Rejections – 35 U.S.C. §101

Cancellation of Claim 11 moots the rejection. Accordingly, the rejection is WITHDRAWN.

#### Claim Rejections – 35 U.S.C. §112

Cancellation of Claims 5 and 11 moots the rejection. Accordingly, the rejection is WITHDRAWN.

Claim Rejections – 35 U.S.C. §102

With respect to the rejection of Claims 1-5 and 10-11 under 35 U.S.C. §102(b) as being anticipated by US 6,015,686 to Dubensky, Jr. et al., Applicants have *now* amended their claims to recite a composition (*i.e.* water, “nanocarbons” and the surfactant) versus the surfactant/compound as previously claimed. Addition of the nanocarbon obviates the rejection. Accordingly, the rejection is WITHDRAWN.

With respect to the rejection of Claims 1-2, 4-7, 10-12 and 14 as being anticipated by Bandyopadhyaya in view of Dullavet to show a state of fact, cancellation of Claims 4-6 and 11 moots the rejection of those claims. Accordingly, the rejection of those claims is WITHDRAWN. With respect to the remaining rejections, Applicants traversal is not entirely clear. Note 37 C.F.R. §1.111(b) which states:

The reply by the applicant or patent owner must be reduced to a writing which distinctly and specifically points out the supposed errors in the examiner’s action and must reply to every ground of objection and rejection in the prior Office action. The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references.

Applicants have traversed the art rejections *en masse* versus pointing out distinctions as applied to individual rejections as required by law. Insofar as the Examiner could discern the arguments, he responds in kind:

Applicants would appear to argue that the Gum Arabic of Bandyopadhyaya is not a surfactant (*i.e.* “surface active agent”) as required by Claim 1. In support of their argument, Applicants have provided various figures attached to their remarks. In doing so, Applicants apparently focus only on Claim 3, stating:

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From this viewpoint, attached Fig.2 shows the chemical structure of the typical surface active agents (Claim 3) of the present invention, Gum Arabic (Bandyopadhyaya) and DNA (Nakashima, Okuzono). As clear from Fig.2, the surface active agents of the present invention have hydrophilic area and hydrophobic area at a separated location in each other, whereas hydrophilic area and hydrophobic area are not clearly distinguishable in either of Gum Arabic or DNA. Thus, Gum Arabic or DNA, which is not a surface active agent, cannot form a globular micelle as required by the present claims.

(Remarks of 11/13/2008 at 13). Or course, Claim 3 was not rejected over Bandyopadhyaya. As such, these arguments are not understood. To state the obvious (recognizing their relationship as independent and dependent claims), Claim 1 does not require the particulars of Claim 3. The rejection is MAINTAINED, updated to reflect amendments below.

With respect to the rejection of Claims 1-2, 5-6, 12 and 14 as being anticipated over Nakashima, Applicants again appear to only argue Claim 3 which was not rejected. The rejection is MAINTAINED, updated to reflect amendments below.

With respect to the rejection of Claims 1-2, 5-6, 12 and 14 as being anticipated over Okuzono, Applicants again appear to only argue Claim 3 which was not rejected. The rejection is MAINTAINED, updated to reflect amendments below.

#### Claim Rejections – 35 U.S.C. §103

Applicants have again traversed the art rejections *en masse* versus pointing out distinctions as applied to individual rejections. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable

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invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

As no arguments directed towards specific rejections were presented, no response is believed necessary. That said, as a practical matter, note that the objective reach of the independent claim (*i.e.* Claim 1) controls. It is not whatever is disclosed, claimed in a dependent claim, or present in drawings. Claim 1 does not restrict the surfactant. Applicants arguments seem to suggest that they believe it to be so limited. *See* (Remarks of 11/13/2008 at 16) (“Accordingly, a worker in the art would not have considered at the time of the priority date that, even though it is known that Gum Arabic can be used for solubilizing nanocarbons in water, alginates also may be used . . .”). Claim 1 is not limited to alginates. Applicants have now created an artificial genus (*i.e.* a Markush group) that defines the “active ingredient” as “a surface active agent capable of . . . or alginates.” Thus, comparing Gum Arabic (or anything) to an alginate is not necessarily that probative to the rejection. Presumably Applicants knew this when they further limited Claim 1 in Claims 16-17.

The fact that Gum Arabic might not “look like” whatever artists rendition of a different surfactant molecule “looks like” is irrelevant. The “surface active agent-like” properties of Gum Arabic are clearly taught. (Bandyopadhyaya at 26, “Fig. 2”). Moreover, it is well known that carbon nanotubes are hydrophobic. If you treat them with Gum Arabic, they all the sudden become soluble in water. The logical conclusion is that there is a hydrophobic “end” and a hydrophilic “end” in the molecule that facilitates this behavior. The fact that Gum Arabic may or may not look like whatever artists renditions are offered has no relevance. Comparing Gum

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Arabic to an artists rendition doesn't address whether it forms "globular micelles," which was all Applicants arguments and claims were understood to mean.

Finally, official notice was taken in the non-final office action of 5/28/2008 . *See* (Non-final Rejection at 13). This was not traversed by Applicants. As such, the teachings are taken as admitted prior art. *See* MPEP 2144.03 C ("If applicant does not traverse the examiner's assertion of official notice or applicant's traverse is not adequate, the examiner should clearly indicate in the next Office action that the common knowledge or well-known in the art statement is taken to be admitted prior art because applicant either failed to traverse the examiner's assertion of official notice or that the traverse was inadequate.").

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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Claims 1-2, 7, 16, 18 and 20-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 30, 32, 34-35 of copending Application No. 11/579,905. Although the conflicting claims are not identical, they are not patentably distinct from each other because both appear to describe aqueous nanocarbon/surfactant solutions.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant is advised that should claim 12 be found allowable, claims 14 and 24 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. No difference (beyond semantic) is seen in the scope of the claims. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

#### *Claim Objections*

Claim 18 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.



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*Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 7-10, and 12-32 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. *See* MPEP 2172. Evidence that the claims fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in the reply filed 11/13/2008. In that paper, applicant has stated:

As described in the Specification, the mechanism of dissolving nanocarbons in water according to the present invention is based on the unique idea, which was proposed by the inventor for the first time, that nanocarbons can be solubilized by *encapsulating nanocarbons in globular micelles*. From this viewpoint, any prior art shown in the Official Action does not disclose nor suggest such idea, and, there is no hint to set the size of globular micelle at the predetermined range (50 to 2000 nm) *to encapsulate nanocarbons in globular micelles*.

(Remarks of 11/13/2008 at 14) (emphasis added). This statement indicates that the invention is different from what is defined in the claim(s) because the claims to don't require encapsulation of the nanocarbons. This is a different phenomena or an extra step than what is being claimed (which is just mixing nanotubes, a surfactant and water).

With respect to Claim 17, "the alginates" lacks antecedent basis. To be sure, "alginates" are mentioned in Claim 1, but use of the definite article "the" implies that certain aliginates were contemplated.

*Claim Rejections - 35 USC § 102*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-2, 7, 10, 12, 14, 18, 20-21, 24-25, 27, 29, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Bandyopadhyaya, et al., *Stabilization of Individual Carbon Nanotubes in Aqueous Solutions*, Nano Letters 2002; 2(1): 25-28 (hereinafter “Bandyopadhyaya at \_\_\_”).

With respect to Claims 1, 16, and 18 Bandyopadhyaya teaches a water solubilizing agent for “nanocarbons,” Gum Arabic. *See* (Bandyopadhyaya at 25, col. 2 – 26, col. 1) (noting the “solubilizing” taught in Fig 2.). As to the new limitations regarding a “solution,” Bandyopadhyaya teaches it. *Id.* Given the “solubilizing” properties, and notwithstanding the ambiguities noted under 35 U.S.C. 112 *supra*, it is expected that whatever the “globular micelle” limitation means is taught by Bandyopadhyaya. “[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency’ under 35 U.S.C. 102, on prima facie obviousness’ under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted].” The burden of proof is similar to that required with respect to product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)). As to Claim 2, Applicants – by claiming “phospholipid” and “non-phospholipid” surfactants have effectively

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claimed every surfactant. Bandyopadhyaya teaches several, but in particular Gum Arabic. *See* (Bandyopadhyaya at 26, col. 1).

Claims 7 and 20 reads on water, taught by Bandyopadhyaya. *Id.* As to Claims 10 and 21, carbon nanotubes are taught. *Id.*

With respect to Claims 12, 14, 24-25, 27, 29 and 31, Bandyopadhyaya teaches dissolving the nanocarbon in an aqueous solution. *See e.g.* (Bandyopadhyaya at 26, col. 1).

Claims 1-2, 12, 14, 16, 18, 20-21, 24-25, 29, and 31 are rejected under 35 U.S.C. 102(a) as being anticipated by Nakashima, et al, *DNA Dissolves Single-walled Carbon Nanotubes in Water*,” Chemistry Letters 2003: 32(5): 456-457 (hereinafter “Nakashima at \_\_\_”).

With respect to Claims 1-2, 16, 18, 20, and 21, Nakashima teaches DNA solubilized nanotubes in aqueous solutions. *See* (Nakashima at 456, col. 1). Given that DNA is typically regarded as a very large polymer – and the fact that it is claimed and disclosed – it is expected that the molecular weight and other properties of Claim 1 are taught. “[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency’ under 35 U.S.C. 102, on prima facie obviousness’ under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted].” The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

With respect to Claims 12, 14, 24-25, 29, and 31, a method for solubilizing the nanotubes is taught. *See* (Nakashima at 456, col. 1).

Claims 1-2, 12, 14, 16, 18, 20-21, 24-25, 29, and 31 are rejected under 35 U.S.C. 102(a) as being anticipated by Okuzono, *DNA Kayoka Carbon Nanotube Kozo to Tokushei*, Polymer Preprints, Japan Yokoshu 2003; 52(13): 3732-3733 (hereinafter “Okuzono at \_\_\_”).

With respect to Claims 1-2, 16, 18, and 20-21 Okuzono teaches DNA solubilized nanotubes in aqueous solutions. *See* (Okuzono, translated page). Given that DNA was claimed in a dependent claim, it is expected that the properties are present. “[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency’ under 35 U.S.C. 102, on prima facie obviousness’ under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted].” The burden of proof is similar to that required with respect to product-by-process claims. In *re* Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In *re* Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

With respect to Claims 12, 14, 24-25, 29, and 31, a method for solubilizing the nanotubes is taught. *See* (Okuzono, translated page).).

*Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. As to the rejection under 35 U.S.C. §§ 102/103, where the applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the Examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection. See MPEP 2112 III. (discussing 102/103 rejections).

Claims 1-2, 7, 10, 12, 14, 18, 20-21, 24-25, 27, 29, and 31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bandyopadhyaya, et al., *Stabilization of Individual Carbon Nanotubes in Aqueous Solutions*, Nano Letters 2002; 2(1): 25-28.

The preceding discussion of Bandyopadhyaya accompanying the anticipation rejection *supra* is expressly incorporated herein by reference. See above with respect to 102/103 rejections.

Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bandyopadhyaya, et al., *Stabilization of Individual Carbon Nanotubes in Aqueous Solutions*, Nano Letters 2002; 2(1): 25-28 as applied to claims 12 and 14 above, and further in view of US 5,641,466 to Ebbesen, et al.

The preceding discussion of Bandyopadhyaya accompanying the anticipation rejection *supra* is expressly incorporated herein by reference. To the extent Bandyopadhyaya may not

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disclose the acid purification step of Claims 13 and 15, the Examiner takes official notice that this procedure is old, known, and common. In support of taking official notice (i.e. in making sure there is “substantial evidence”) on the record, the Examiner cites to Ebbesen. *See generally* (Ebbesen 3: 20 *et seq.*) (noting the use of acids). One would be motivated to purify the nanotubes as taught by Ebbesen to, among other reasons, *remove impurities*.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bandyopadhyaya, et al., *Stabilization of Individual Carbon Nanotubes in Aqueous Solutions*, Nano Letters 2002; 2(1): 25-28 in view of Dullavet, et al., *Meaning of molecular weight gum arabic measurements*, Polymer Bulletin 1989; 21: 517-521 to show a state of fact as applied to claims 1 above, and further in view of US 6,331,262 to Haddon and US 6,683,783 to Smalley, et al.

The preceding discussion of Bandyopadhyaya accompanying the anticipation rejection *supra* is expressly incorporated herein by reference. With respect to Claims 7-9 the extent Bandyopadhyaya may not disclose the addition of lithium and persulfate, Haddon does. *See* (Haddon 9: 30 *et seq.*) (lithium) *and* (Haddon 6: 31) (persulfate – note also the aqueous solution). One would be motivated to use a persulfate to purify the nanotubes, as taught by Haddon. One would be motivated to dope the nanotubes with lithium for any number of reasons, for example a lithium ion battery, as taught by Smalley. (Smalley 31: 52 *et seq.*) (noting that lithium doped nanotubes are useful in batteries).

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Claims 1-2, 12, 14, 16, 18, 20-21, 24-25, 29, and 31 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakashima, et al, *DNA Dissolves Single-walled Carbon Nanotubes in Water*,” Chemistry Letters 2003: 32(5): 456-457.

The preceding discussion of Nakashima accompanying the anticipation rejection *supra* is expressly incorporated herein by reference. See above with respect to 102/103 rejections.

Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima, et al, *DNA Dissolves Single-walled Carbon Nanotubes in Water*,” Chemistry Letters 2003: 32(5): 456-457 as applied to claims 12 and 14 above, and further in view of US 5,641,466 to Ebbesen, et al.

The preceding discussion of Nakashima accompanying the anticipation rejection *supra* is expressly incorporated herein by reference. To the extent Nakashima may not disclose the acid purification step of Claims 13 and 15, the Examiner takes official notice that this procedure is old, known, and common. In support of taking official notice (i.e. in making sure there is “substantial evidence”) on the record, the Examiner cites to Ebbesen. *See generally* (Ebbesen 3: 20 *et seq.*) (noting the use of acids). One would be motivated to purify the nanotubes as taught by Ebbesen to, among other reasons, *remove impurities*.

Claims 1-2, 12, 14, 16, 18, 20-21, 24-25, 29, and 31 rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Okuzono, *DNA*

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*Kayoka Carbon Nanotube Kozo to Tokushei*, Polymer Preprints, Japan Yokoshu 2003; 52(13): 3732-3733.

The preceding discussion of Okuzono accompanying the anticipation rejection *supra* is expressly incorporated herein by reference. See above with respect to 102/103 rejections.

Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuzono, *DNA Kayoka Carbon Nanotube Kozo to Tokushei*, Polymer Preprints, Japan Yokoshu 2003; 52(13): 3732-3733 as applied to claims 12 and 14 above, and further in view of US 5,641,466 to Ebbesen, et al.

The preceding discussion of Okuzono accompanying the anticipation rejection *supra* is expressly incorporated herein by reference. To the extent Okuzono may not disclose the acid purification step of Claims 13 and 15, the Examiner takes official notice that this procedure is old, known, and common. In support of taking official notice (i.e. in making sure there is “substantial evidence”) on the record, the Examiner cites to Ebbesen. *See generally* (Ebbesen 3: 20 *et seq.*) (noting the use of acids). One would be motivated to purify the nanotubes as taught by Ebbesen to, among other reasons, *remove impurities*.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37



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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

All amendments made in response to this Office Action must be accompanied by a pinpoint citation to the Specification (i.e. page and paragraph or line number) to indicate where Applicants are drawing their support.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL C. MCCrackEN whose telephone number is (571)272-6537. The examiner can normally be reached on Monday through Friday, 9 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel C. McCracken/  
Daniel C. McCracken  
Examiner, Art Unit 1793  
DCM

/Stuart Hendrickson/  
Stuart L. Hendrickson  
Primary Examiner